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Leading Force

Advanced Technology and the Alberta Labour Market

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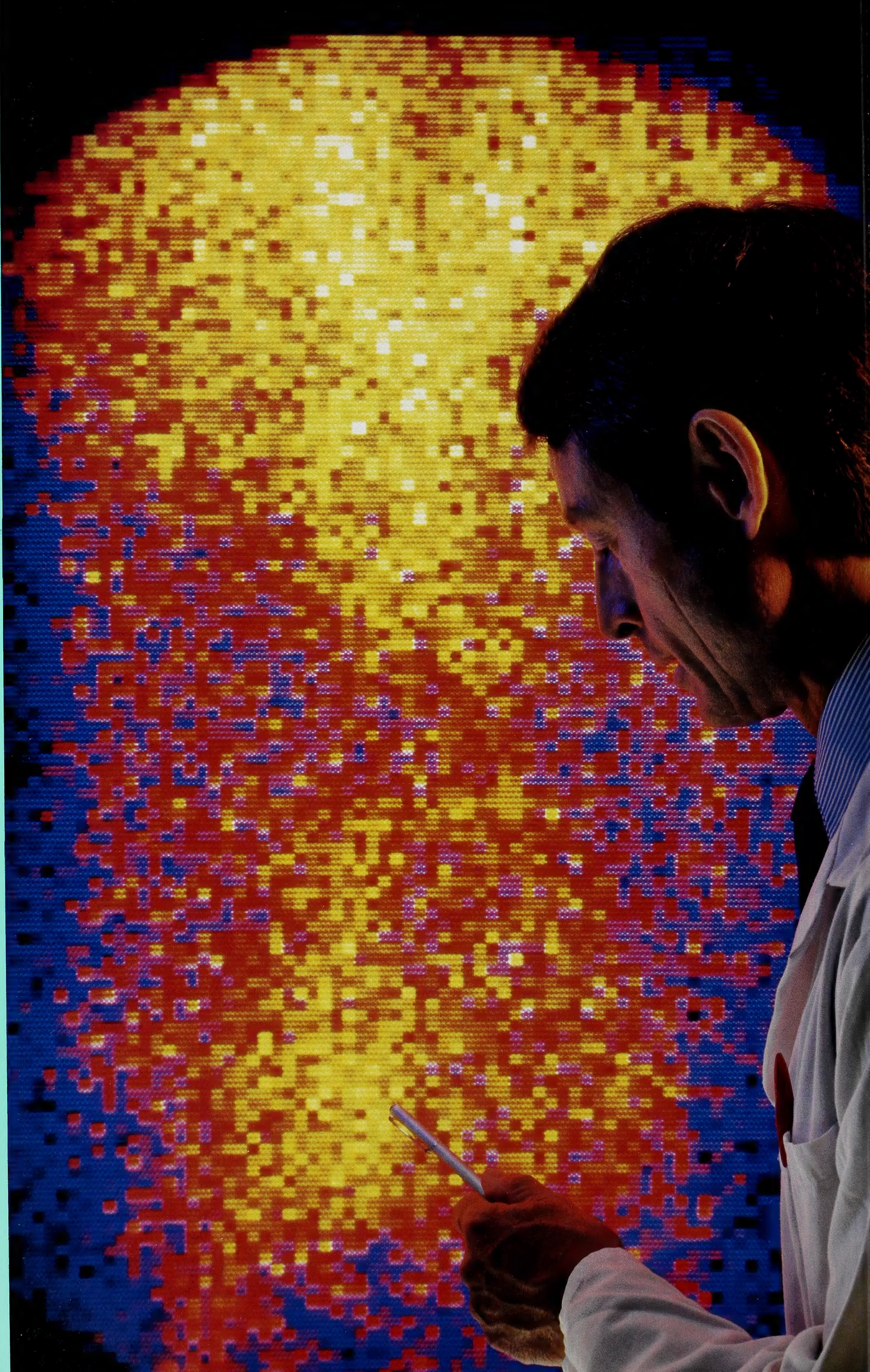


INTRODUCTION

Though traditionally known for its oil, gas and agriculture, Alberta has achieved considerable success over the last decade in the development of new technologies. Indeed, the province is now home to more than 1,000 advanced technology companies, employing about 50,000 individuals.

Why is advanced technology flourishing in Alberta?

One major reason is that the Alberta labour force is among the most youthful, highly-skilled and well-educated in Canada. With their characteristic industriousness, broad range of skills and entrepreneurial flair, Albertans have been able to develop and market a number of new technologies.

The combination of this top-notch workforce with:

- a government strongly supportive of free enterprise and advanced technologies.
- respected research institutes and universities;
- a good labour relations climate; and
- an impressive quality of life

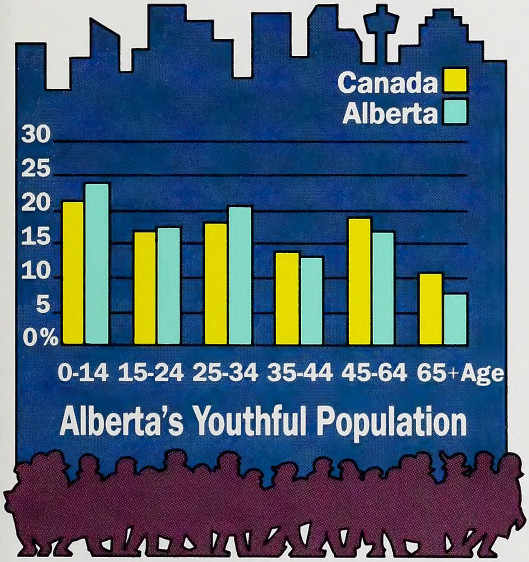
has resulted in an economic and social milieu extremely conducive to the development of new technologies.

This booklet provides information about Alberta's labour force, government, research institutes, universities and lifestyle of interest to employers who are involved with advanced technologies. If you are interested in the application of science to the marketplace, we invite you to continue reading and to consider making Alberta your home.

Photos Alberta's advanced technology companies now employ about 50,000 individuals.
Left - Biomira Inc., Edmonton.
Inside cover - Alberta Microelectronic Centre, Edmonton.

THE PEOPLE

Few factors weigh more heavily in the success of advanced technology firms than their access to young, hardworking people with a broad range of education and skills. We think you will find that Albertans meet these requirements.

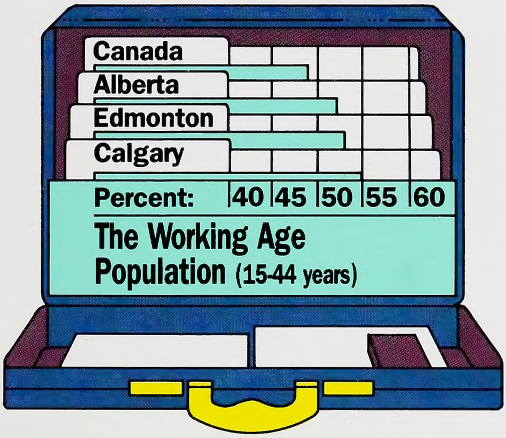


Alberta's Youthful Population

Young

Alberta's population is a young one. Roughly 60 percent of its 2.4 million people are less than 32 years of age; more than a third are under 25. The province has the highest proportion of 15-to-44-year-olds in Canada.

For employers, the demographics are ideal. Most Albertans are either of prime working age or younger. A better blend of trainable, experienced, and highly motivated workers is hard to find.



The Working Age Population (15-44 years)

Photo Roughly 60 percent of Albertans are less than 32 years of age.
The University of Alberta.

Hardworking

Albertans are also highly motivated, with a strong work ethic. Indeed, more than 70 percent of working age Albertans (15 to 65 years old) are in the labour market, the highest participation rate in Canada. Albertans have the best job attendance record in Canada; in 1987 the average Alberta employee missed only 6.8 days of work, compared with a national average of 8.6 days. The industriousness of Albertans has helped the province's economy to grow strong. In 1987 Alberta's gross domestic product was $58.8 billion, or $24,695 per person, among the highest per capita GDPs of any province in Canada.

Another sign of the Albertan work ethic is the large number of entrepreneurs in the province. With 120,000 active small companies and an average of 1,200 new business incorporations a month, Alberta has one of the strongest small business sectors in Canada. Currently firms with less than 100 workers employ half of all working Albertans and account for more than 70 percent of all new jobs created. The success of these companies attests to the strength of Alberta's entrepreneurial spirit.

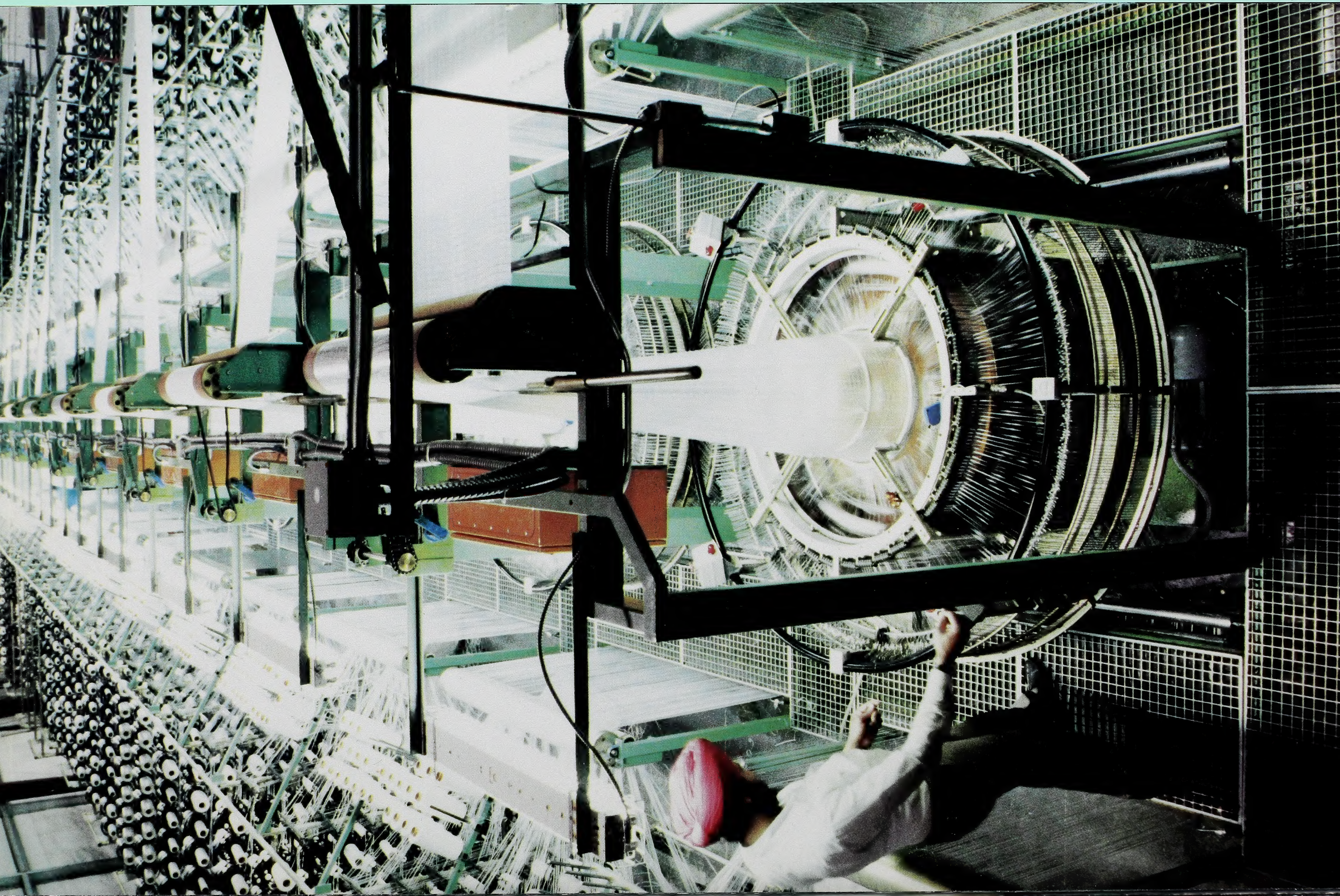
Photos Albertans are among the most productive workers in Canada.
Right - Novatex Manufacturing Canada Ltd., Calgary.
Above - Chembiomed Ltd., Edmonton.

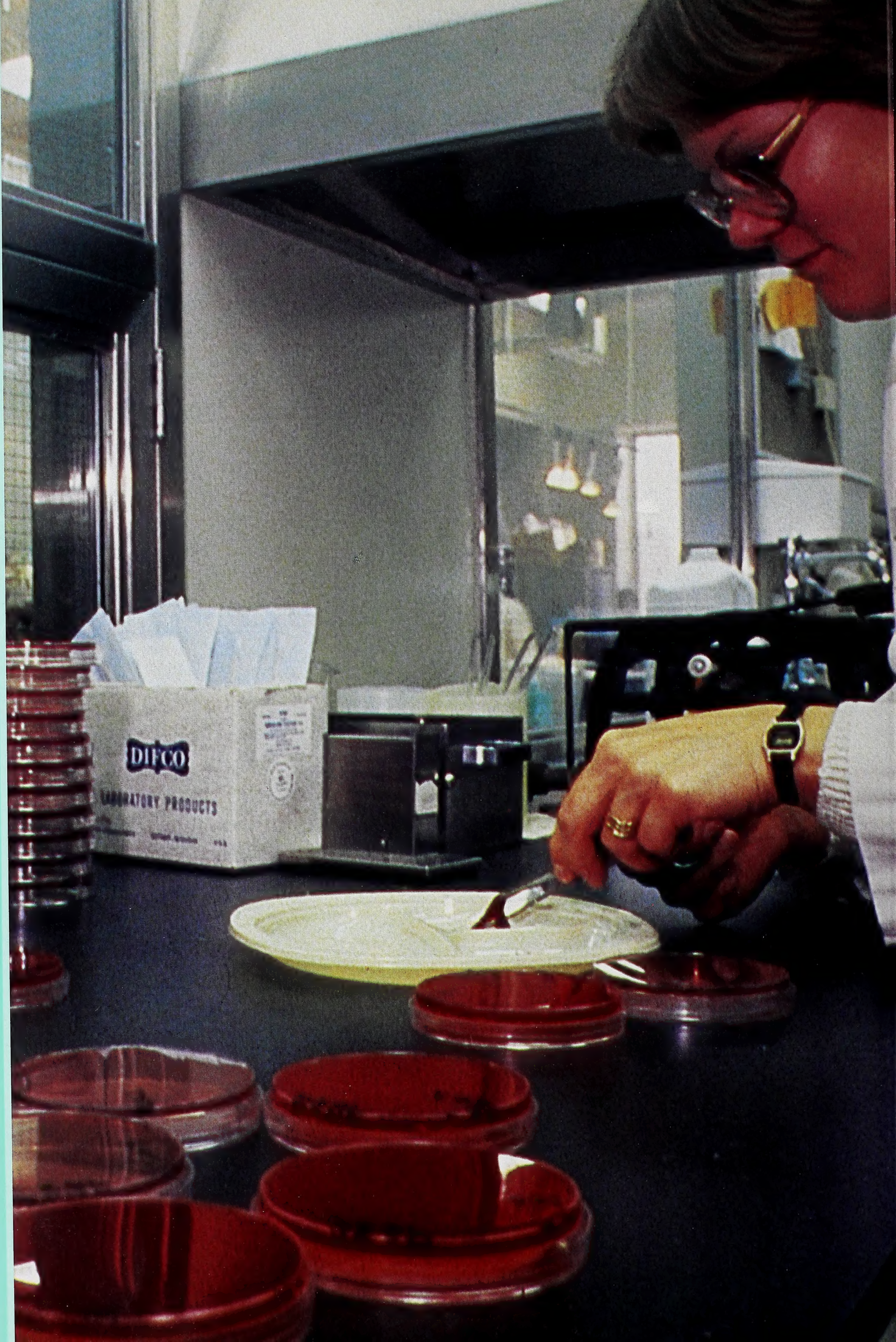
AN INVITATION

THE QUALITY OF LIFE IN ALBERTA

GOVERNMENT SUPPORT FOR ADVANCED TECHNOLOGY

THE LABOUR RELATIONS CLIMATE

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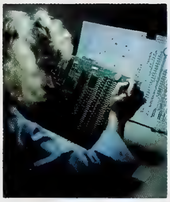
LABORATORY PRODUCTS

Highly-skilled



Advanced technology companies require a diverse mix of skills. They need scientists and engineers to conceive and develop products. They must have energetic and creative managers to handle administration and marketing. And they need trained technicians and technologists to undertake production.

The Alberta labour force contains nearly every type of skilled individual required by advanced technology firms. Consider these facts:

- Nearly one in every 100 Albertans is an engineer. Alberta has more engineers per capita than any other Canadian province and almost as many per capita as California.
- Alberta has the highest concentration in Canada of workers engaged in science-, engineering- and math-related occupations.
- Alberta is home to one-seventh of the world's seismic surveyors.
- More than 30 percent of working Albertans are in managerial and professional occupations.
- With about 9 percent of Canada's population, Alberta trains 25 percent of Canada's apprentices each year.
- Alberta has an ample supply of workers skilled in product fabricating, construction trades and food processing.

Photos: Alberta has the highest concentration in Canada of workers engaged in engineering-, science-, and math-related occupations.
Left - Courtesy of the Edmonton Economic Development Authority.
Above - Can U Tel Industries, Calgary.

Well-educated

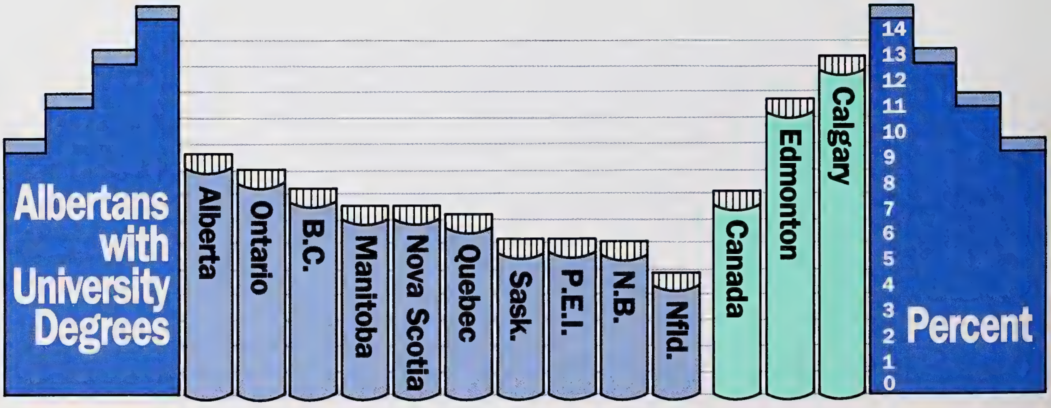
The Alberta government has long been committed to developing a first-rate post-secondary education system with high standards and quality research. Today Alberta is home to four publicly funded universities, three technical institutes and a province-wide network of community colleges. Additionally, there are numerous private colleges and vocational schools in Alberta.

As a result, Albertans are exceptionally well-educated. Nearly 40 percent of the general population has some level of post-secondary education, well above the Canadian average of 31.7 percent. Indeed, Alberta has more people per capita with university degrees than any other province in Canada. In Calgary and Edmonton, the educational attainment levels are even higher; nearly one out of every five working age persons in these cities has a post-secondary degree, diploma or certificate, while nine out of every 10 have been to high school.

Albertans are also more likely than other Canadians to participate in job-related, continuing education programs. Nearly one out of every 10 Albertans aged 17 years or older -- the highest rate in Canada -- is enrolled in a work-related adult education course.

Alberta's post-secondary institutions offer programs in a wide range of advanced technology areas, including telecommunications, computer engineering, microelectronics, computer science, avionics and the natural sciences, to name a few. Every year several thousand post-secondary graduates enter the advanced technology work force.

Photo Albertans are exceptionally well-educated. M.E. LaZerte Composite High School, Edmonton



THE LABOUR RELATIONS CLIMATE

The availability of appropriately skilled labour is only one ingredient in the success of any company. To remain competitive, a business, especially in the advanced technologies area, must be able to respond swiftly to market developments and emerging consumer needs. Such agility demands close co-operation and flexible relationships between management and labour. It also requires a stable and reasonably priced supply of labour, together with straightforward and up-to-date labour laws.

Alberta has a long history of good industrial relations as illustrated by the following facts:

- From 1975 to 1986 the time lost each year in Alberta from strikes and lockouts averaged less than one percent of total time worked.
- Since 1983 more than 95 percent of the collective agreements signed in this province were reached without work stoppages.
- Twenty-six percent of Alberta's workforce is unionized, the lowest percentage in Canada.
- Since 1983 the average weekly wage in Alberta has not risen faster than the rate of inflation.

Photo Alberta has a long history of good industrial relations.
Can U Tel Industries, Calgary.

GOVERNMENT SUPPORT FOR ADVANCED TECHNOLOGY

Fully aware of the economic opportunities afforded by advanced technology, the Alberta government is committed to its continued development. Toward that end, the province supports innovative commercial ventures and facilitates collaboration between its universities and the private sector. Additionally, the Alberta government provides considerable assistance to employers for training and expanding staff. For example, advanced technology firms moving to Alberta may receive help from the Department of Career Development and Employment in establishing and financing employee training programs.

To date, the Alberta government's support for advanced technology has been substantial. In the past five years more than a dozen major research development institutes, centres and offices have been established. Over $70 million has been spent to create and support this technology infrastructure. And that does not include what the Alberta government spends each year in support of research and development activities at our universities and other institutions. In 1986/87, our commitment to research and development was about $300 million, the largest research budget of any province in Canada.

With a solid technology infrastructure, more than 1,000 advanced technologies, companies and organizations, and 50,000 people employed by those companies and organizations, the province has a solid foundation on which to build.

Alberta offers assistance to individuals and organizations to carry out applied research, product development and finally product commercialization.

Photo To date the Alberta government's support for advanced technology has been substantial. Cross Cancer Institute, Edmonton.

Research Institutes

A key element in Alberta's advanced technology infrastructure is the Alberta Research Council (ARC). Established in 1921, the ARC is the largest and oldest provincial research organization in Canada. Headquartered in Edmonton, with a large facility in Calgary, the Alberta Research Council (ARC) provides technical advice and assistance to business and industry, while working on longer-term research in such fields as biotechnology and computer-based advanced technologies. Other areas of research include industrial development, natural resources, energy, agriculture, forestry and forest products, transportation and environment. The ARC houses the Electronics Test Centre, a forest products testing laboratory, and a biotechnology pilot plant, among other research and testing laboratories.

Established in 1979, the Alberta Heritage Foundation for Medical Research (AHFMR) contributes about $35 million a year to the research efforts of more than 150 scientists recruited from throughout the world. To date, foundation funds have helped to train 2,100 students and provide equipment for 275 laboratories. Working in Alberta's universities and hospitals, foundation-supported researchers are pioneering new ways to diagnose heart disease, detect cancer and combat viruses. The foundation's Technology Transfer Program provides seed capital to researchers in Alberta-based businesses and universities for the development of new scientific products. The AHFMR also administers the Alberta Medical Innovation Program which provides funding to Alberta businesses and entrepreneurs to support prototype development, testing of new drugs and devices in a laboratory environment, and clinical trials of promising new drugs and devices.

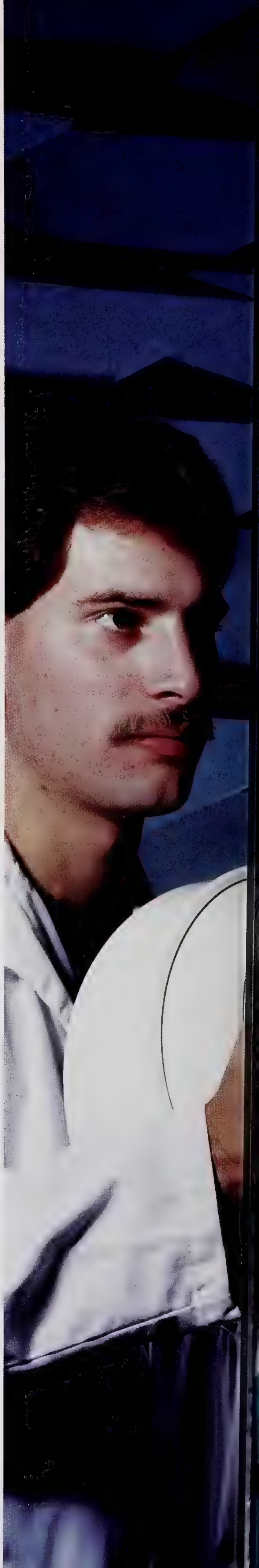
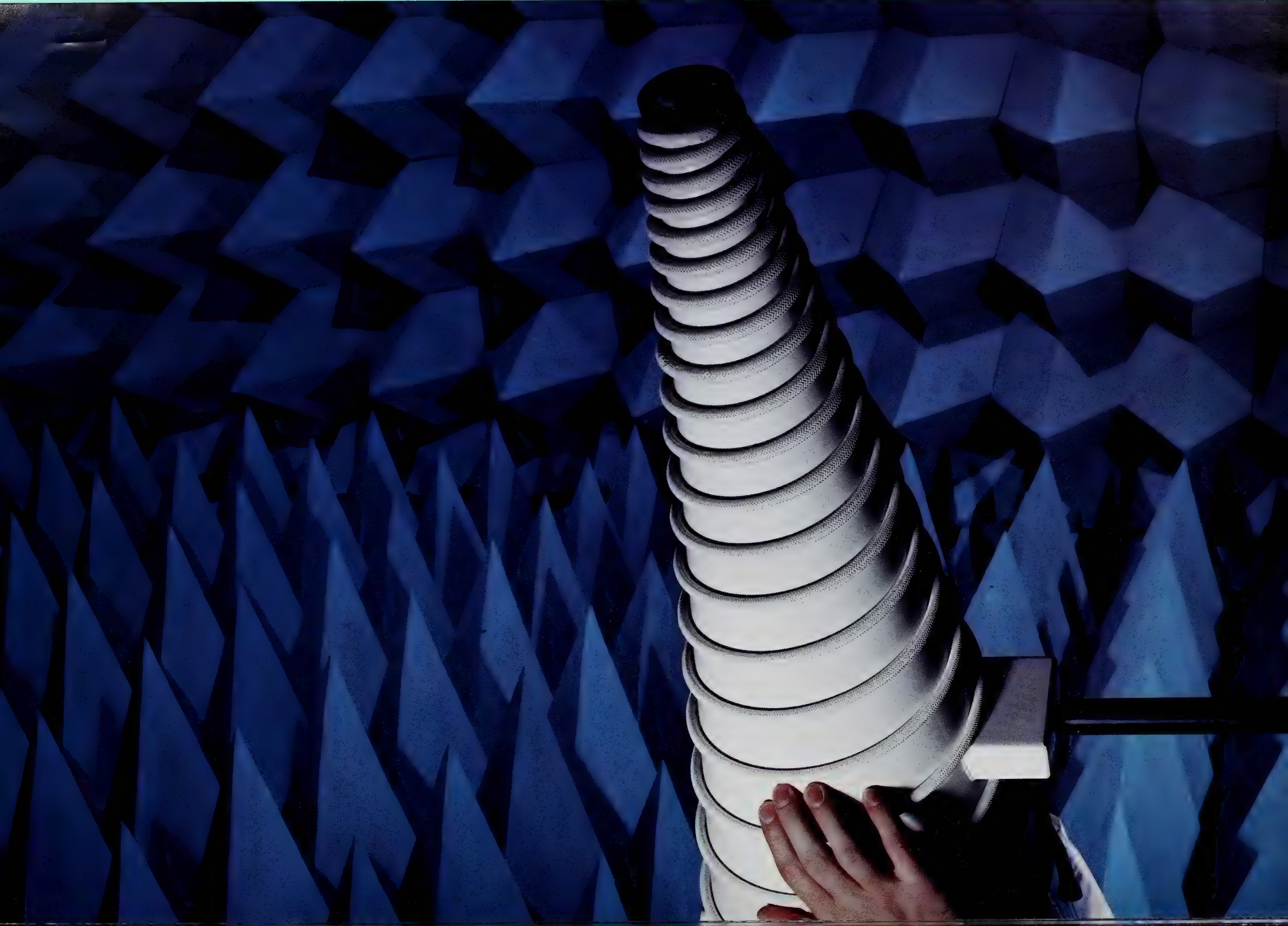


Photo Alberta's research institutes provide a solid infrastructure for the development of advanced technologies.
The Electronics Test Centre, Edmonton.

AN INVITATION

THE QUALITY OF LIFE IN ALBERTA



Among the other provincially supported research organizations:

- **The Alberta Laser Institute.** The first centre of its kind in Canada, it helps develop cost-effective industrial applications of the laser. The Institute's advanced high power laser-based metalworking machinery forms the core of one of the most modern laser materials processing centres in North America.
- **The Alberta Telecommunications Research Centre.** Established in 1985, as a partnership between Bell Northern Research Ltd., the University of Alberta and the Alberta Government, and supported by several private companies, including Novatel Communications Ltd., Alberta Government Telephones, "edmonton telephones" and LSI Logic Corporation of Canada Inc. This non-profit centre helps companies research and develop new products and services in telecommunications.
- **The Alberta Microelectronic Centre.** Established at the U of A and later expanded to Calgary, it helps Alberta electronics companies apply new microelectronics technology to their operations and specializes in the design and manufacture of custom silicon chips.
- **The Centre for Frontier Engineering Research (C-FER).** Located at the U of A, C-FER was established to solve engineering problems related to cold-weather energy development. Its research programs in offshore structures and downhole tubular systems are designed to foster the economical development of Canada's petroleum resources. C-FER is constructing an engineering facility to carry out low temperature engineering research and down-hole tubular testing in a unique combination of environments. The facility, not equalled anywhere in the world, is slated for completion in June 1990.
- **Biotechnology Pilot Plant.** The Alberta Research Council's biotechnology pilot facility acts as a bridge between laboratory research and production of new products in chemical processing, agriculture and health care. The plant, the only contract fermentation facility of its kind in Canada, focuses on development of efficient processes to help companies bring their products to commercial production quickly and economically.

- **The Food Processing Development Centre.** Administered by the Alberta Department of Agriculture, the centre helps Alberta food processors develop and apply new techniques and products.

Photos Alberta has the finest in electronics testing facilities.
Left - Canadian Standards Association (CSA).
Above - Chembiomed Ltd.

Universities

Scientists at Alberta's major universities are eager to work with the private sector to transfer new technologies from the laboratory to the marketplace.

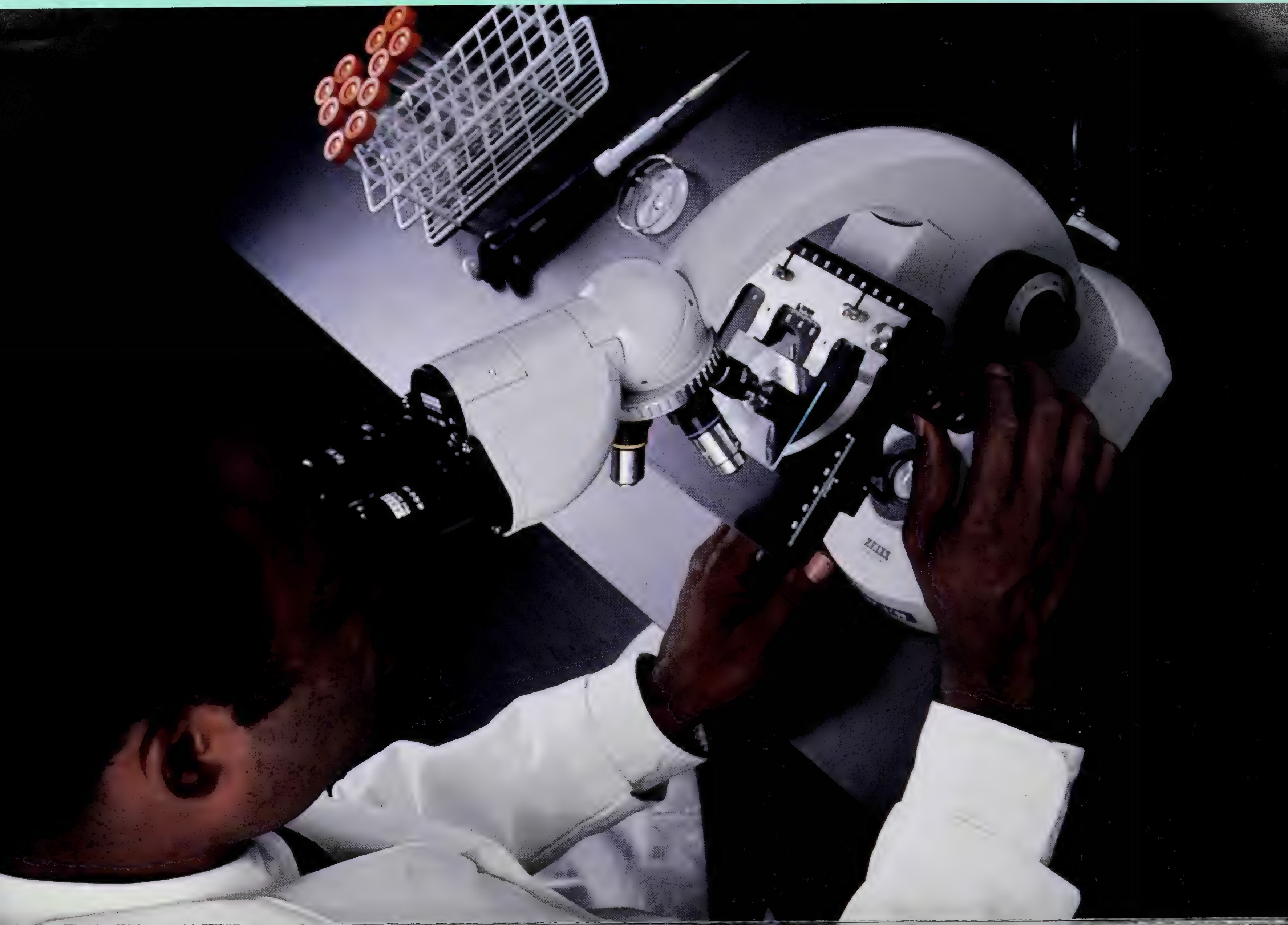
The Engineering Faculty at the University of Alberta has helped to establish industrial research centres for electronics, telecommunications, lasers and energy production. Research in the Faculty of Science covers such areas as computers, earthquake detection, the use of microbes to dispose of industrial waste, genetic engineering and the biosyntheses of antibiotics. Medical researchers at the U of A are developing new treatments, including the use of lasers to remove cancerous tissue. The Faculty of Agriculture and Forestry has established a Plant Biotechnology Centre, which will work with industry to develop new products.

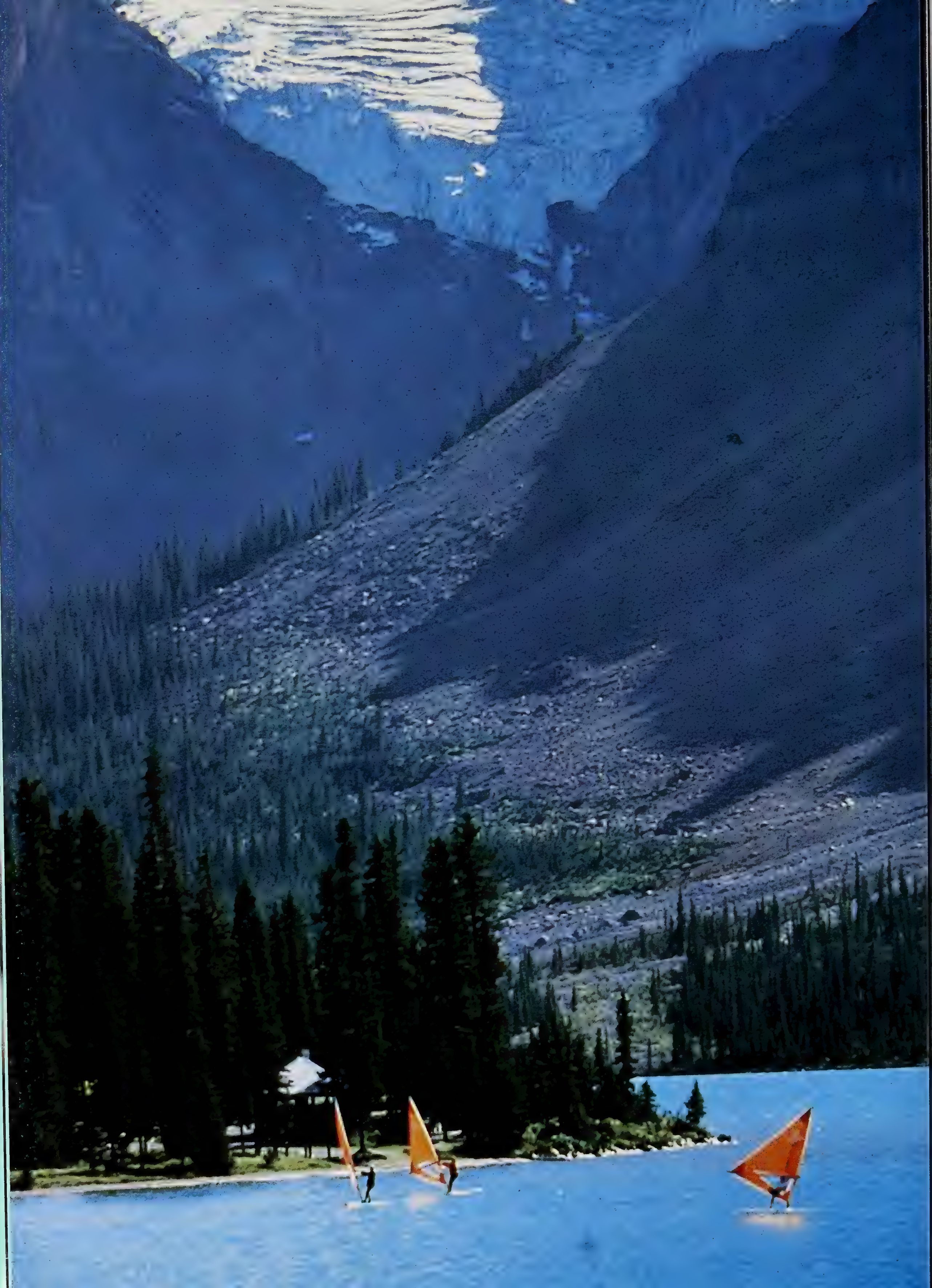
In 1977 the U of A established Chembiomed Ltd., now a leading biotechnology company and the largest producer of biologically active carbohydrates in the world. The firm has developed a line of synthetic blood diagnostic products and is now working on new products to diagnose and treat cancer, AIDS and infectious diseases. In 1985 two U of A researchers set up Biomira Inc. to develop and market cancer-fighting products. Other university researchers have set up four more pharmaceutical companies.

The U of C is also known for the close working relationship between its scientists and industry. With the highest concentration of reproductive scientists and one of the highest concentrations of genetic engineers in Canada, it has worked for several years with Alta Genetics Inc., the first company in the world to specialize in embryo transfer. The university is also renowned for its expertise in oil and gas and the development of sophisticated software for the petroleum industry. The university's Petroleum Recovery Institute, Arctic Institute of North America, and Alberta Sulphur Research Ltd. are highly respected by the Canadian energy industry. Additionally, the U of C's medical faculty receives more research funding per capita than any other medical school in Canada.

Advanced technology studies at the University of Lethbridge in southern Alberta range from agriculture to astrophysics. The university's developments in infra-red spectrophotometry could have industrial and medical applications. Its work in plant growth promises to have major implications for the control of plant height and crop yields.

Photo University scientists are eager to help the private sector research and develop new technologies.
Chembiomed Ltd.





THE QUALITY OF LIFE IN ALBERTA

Young, highly-skilled, hardworking people, a good labour relations climate and solid government support for education, research, product development, small business and worker training -- these are certainly essential factors for successful advanced technologies. But there is one more -- the quality of life. In this area, Alberta measures up remarkably well, both socially and economically. Few places in the world offer a higher standard of living or more exciting cultural and natural environments.

Alberta's attributes are many. It has a long history of political stability. It is the only Canadian province without sales or restaurant tax. Its citizens enjoy the lowest overall tax rate in Canada. Its major cities offer among the lowest housing prices in Canada. It has modern education and health care systems, extensive social services, and excellent transportation and communications networks.

Additionally, Alberta is naturally beautiful and culturally diverse. It has mountains, foothills, prairies, secluded lakes and large rivers. Culturally, it has sophisticated urban centres, a thriving arts community, a variety of theatre and music festivals, and an ethnically varied population. In fact, every sixth Albertan is a first-generation immigrant; a mosaic of the world's races and religions is found here.

Albertans are also noted for their volunteer spirit. Thanks largely to the efforts of dedicated volunteers, the province has been able to host several international sporting events, including the 1978 Commonwealth Games in Edmonton and the most successful Winter Olympics ever, the 1988 Winter Games in Calgary.

Photo Few places in the world offer a higher standard of living or more exciting cultural and natural environments.
Jasper, Alberta.

AN INVITATION

Why not consider Alberta?

So many have.

Since 1982, 57,000 immigrants have settled in Alberta. In 1987, five percent of Alberta's immigrants were entrepreneurs, another 28.3 percent were trained in managerial or technical occupations. Clearly, business men and women throughout the world are discovering Alberta and its many opportunities for personal and economic growth.

For more information about Alberta's labour market and employment and training programs contact:

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Photo People from throughout the world are discovering Alberta and its opportunities for personal and economic growth.
The Alberta Research Council.

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Alberta
CAREER DEVELOPMENT
AND EMPLOYMENT

TECHNOLOGY, RESEARCH
AND TELECOMMUNICATIONS